

The Role of Pre-Operative Inflammatory Markers in Predicting Postoperative Infection in Patients Undergoing Total Knee Arthroplasty

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Background: C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) are frequently used to aid the diagnosis of postoperative peri-prosthetic infections (PPIs) following total knee arthroplasty (TKA). The role of using these inflammatory markers preoperatively to predict the risk of postoperative PPIs in patients undergoing TKAs has not been well documented to date.

Objective: To evaluate the role and cost-effectiveness of preoperative markers; ESR and CRP in predicting postoperative PPIs in patients undergoing elective primary TKA.

Design: A Prospective Study.

Setting: Department of Orthopedic Surgery, Salmaniya Medical Complex, Kingdom of Bahrain.

Method: All patients who underwent primary or simultaneous bilateral TKA from 1 September 2014 to 31 December 2016 were included in the study. Patients who had uncontrolled diabetes, previous surgery or septic arthritis on the same knee, or lost for follow-up were excluded. Inflammatory markers were documented 1-2 days preoperatively. Patients were followed up over a period of 12 months postoperatively. All necessary data were collected prospectively and documented. The data were analyzed using SPSS 20.

Result: One hundred thirty-nine patients were included in this study. One hundred and forty-two primary TKAs were performed during the study period, three patients underwent simultaneous bilateral TKA. Eighty-seven (62.59%) patients were females and 52 (37.41%) were males. The mean age was 64 years. Ninety-five (68.34%) patients had one or more preoperative comorbidities. High preoperative levels of CRP and/or ESR were found in thirty-seven (26.62%) patients. Two (1.44%) patients developed postoperative infection and were treated successfully. No other complications were recorded.

Conclusion: In our study, we found no significant link between elevated preoperative inflammatory markers and the presence of PPI. Therefore, we do not support the routine use of preoperative inflammatory markers.